A. C. BAXTER, M. D.
~~Assistant Director and Acting~~ Director.

STATE OF ILLINOIS
HENRY HORNER, Governor
DEPARTMENT OF PUBLIC HEALTH
SANITARY ENGINEERING LABORATORIES
SPRINGFIELD

CLARENCE W. KLASSEN,
Chief Sanitary Engineer
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Chemist

SANITARY ANALYSIS OF WATER FROM Joliet (Will Co.) School supply

Source 123' drilled well. barber's Corner School, Dist. #104

Date collected Oct. 30, 1939 Laboratory No. 166538

Collected by Bertha Kolpack for

Remarks

Sediment	Slight iron
Turbidity	15
Odor	0
Nitrite nitrogen	
Nitrate nitrogen	
Chloride	
Bacteria per ml. (37° C.)	4

Coli-type bacteria:

In portions of	*10 ml.*	
Presumptive tests		
Confirmatory tests	5+	

The results of the analysis of the water sample collected from the well at the Barber's Corner School, Dist. 104, Will County, showed that the water was contaminated and not safe for drinking at the time the sample was collected. From the data supplied by you on the location and construction of the well, it appears that the omly surface defect is the seepage of waste water thru cracks in the well platform into the ground. However, in the Joliet area there is always the danger of underground pollution, where wells penetrate the creviced Niagaran limestone, unless water from this formation is cased off. In this area, the upper limestone is cracked, creviced and filled with solution channels and may convey water and likewise pollution for great distances. We recommend that the well be sterilized with chloride of lime (see enclosed bulletin). After the chlorine taste and odor has left the water, another sample should be collected for analysis. If contamination is still present, it will be necessary to extend the well casing thru the limestone and seal it to an impervious strata beneath or to provide equipment to chlorinate the supply continuously.

Sanitary Engineer, District. #1
Bern J. Leland
APPROVED: E J Olenick M.D.
District Health Superintendent.

CC- to Louis Bottino, County School Supt.
Joliet, Ill.

BJL:sh
Enc.

The statements on the reverse side are a part of this opinion.

CONCERNING THIS SANITARY ANALYSIS

The statements on the reverse side are based not only on the analytical results, but also on the description of the source as furnished by you or already on file in this office. It is further recommended as follows:

(a) **If the water is unsafe to drink,** abandon the supply for one of known safety or bring the water to a boil before use, until the suggested improvements have made the supply safe.

(b) If the source is not satisfactory, make the suggested improvements immediately.

(c) If the water is safe, take care to keep it safe by protecting the supply against contamination.

A laboratory examination of the water has been made to show the presence or absence of waste matter of human or animal origin. If the water is contaminated by surface wash or sewage, then parasitic intestinal worms, amebic cysts or germs of intestinal diseases, such as cause bowel complaint, diarrhea, dysentery or typhoid fever, may be present in the water, thus endangering the health of persons drinking the water. The analytical terms and results are briefly explained as follows:

Physical and Chemical Tests: "Sediment" through "Chloride." A desirable water has an attractive appearance (no sediment or turbidity) and has no objectionable odor or taste. Chemical results are given in parts per million.

Bacteriological Tests: "Bacteria per ml." indicates the number of microörganisms present in one milliliter (ml.) of water (20 drops). The result reported gives the number of bacteria which will grow at body temperature (37°C or 98°F). These bacteria may not be of intestinal origin and therefore may not be of sanitary importance. Occasionally the test plates are overcrowded so that no bacterial count can be obtained. In such case the report shows "Innumerable" indicating more than 1000 bacteria per ml.

"Coli-type bacteria" "Presumptive Tests" "Confirmatory Tests": A water containing bacteria of intestinal origin (E. coli and A. aerogenes, also known as "coliform" bacteria), if placed in a sugar broth (lactose), will cause fermentation and production of gas in 24 or 48 hrs. By means of further laboratory tests the presence of these bacteria in 10 ml. portions is indicated by a +, their absence by a—. The numeral preceding the sign shows the number of portions giving that result.

Example: 2+3— indicates that two 10 ml. portions of the sample did show and three portions did not show coli-types of bacteria present.

After receipt of the sample in the laboratory it requires from two to six days to complete the sanitary or bacteriological analysis.

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